
Installing AC power

For AC-powered systems, use this procedure to install safety ground/protective earth and logic return wiring and to install ground and alarm cabling for a UPS.

For AC-powered systems without reserve power, one input receptacle is required per column, within 2.4 m (8 ft) of each pedestal. One IG-L6-30 or L6-30 receptacle is required for each column (option 21A requires one L6-20 receptacle).

Instead of using the power plug provided, the PDU can be hard-wired to the power source. In this case, #10 AWG conductors routed through 3/4-in. conduit are generally used. The leads connect to the L1, L2, and GND terminations on the field wiring terminal block on the PDU.

Note: Do not use ground fault circuit interrupt (GFCI) devices on Meridian 1 AC power feeds.

Systems that use reserve power plug into the UPS, which in turn plugs into the power source (associated batteries can be located within the UPS or installed externally). Consult the UPS documentation for receptacle requirements.

As a safety precaution, all AC service panels should be located in an area that is easily accessible at all times to allow for emergency shutdown. Additionally, each circuit breaker within a panel should be clearly marked to identify the system component or components it services. An optimal location would be near, or just outside the entry to the room containing the Meridian 1 (or the UPS, if equipped).

Safety ground/protective earth and logic return wiring

A separate safety ground/protective earth connection is required. The safety ground/protective earth wire must be #6 AWG or larger and must connect the pedestal to the single-point ground (SPG) in the service panel. The single-point ground can be an isolated ground (IG) bus or AC equipment ground (ACEG) bus in the service panel or transformer. [Figures 18, 19, and 20](#) show an ACEG as the single-point ground.

Depending on the distances between columns, the location of the service panel, and the availability of panel SPG connection points, safety ground/protective earth wiring can be daisy-chained or run independently from each column to the service panel. [Figures 19 and 20](#) show safety ground/protective earth wiring in daisy-chain configurations.

Note: Refer to *Meridian 1 installation planning* (553-3001-120) for a complete description of approved ground sources and methods. Insulated ground wire must be used for system grounding.

Multiple-column systems use a logic return equalizer (LRE) as the point where the logic return wires from different columns are consolidated before connecting to the single-point ground. The NT6D5304 small LRE (usually used with AC power systems) is available from Northern Telecom.

Figure 18
Single column—ground and logic return distribution

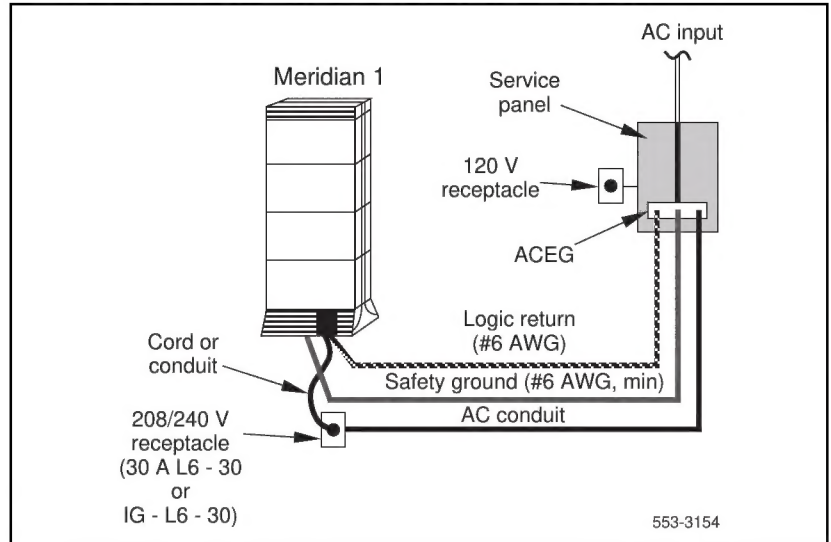


Figure 19
Multiple column—ground and logic return distribution

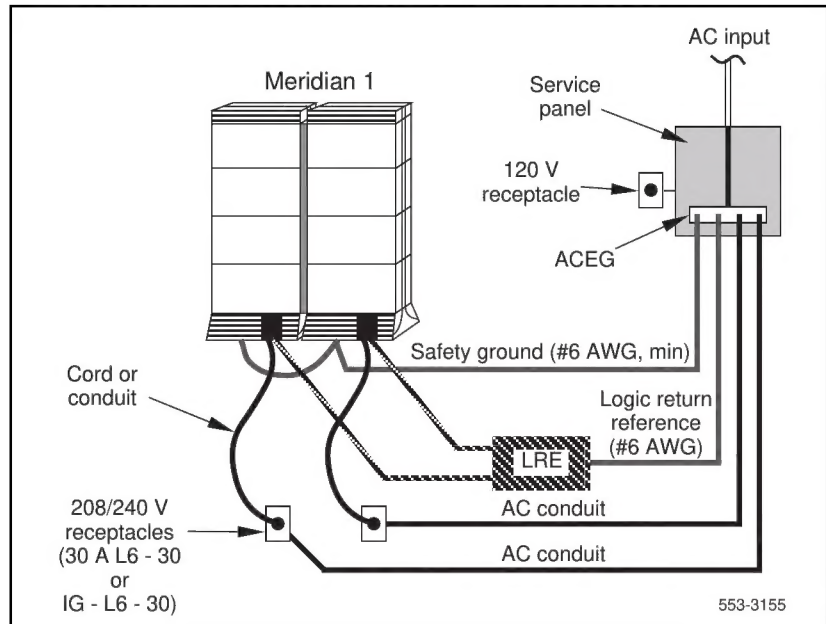
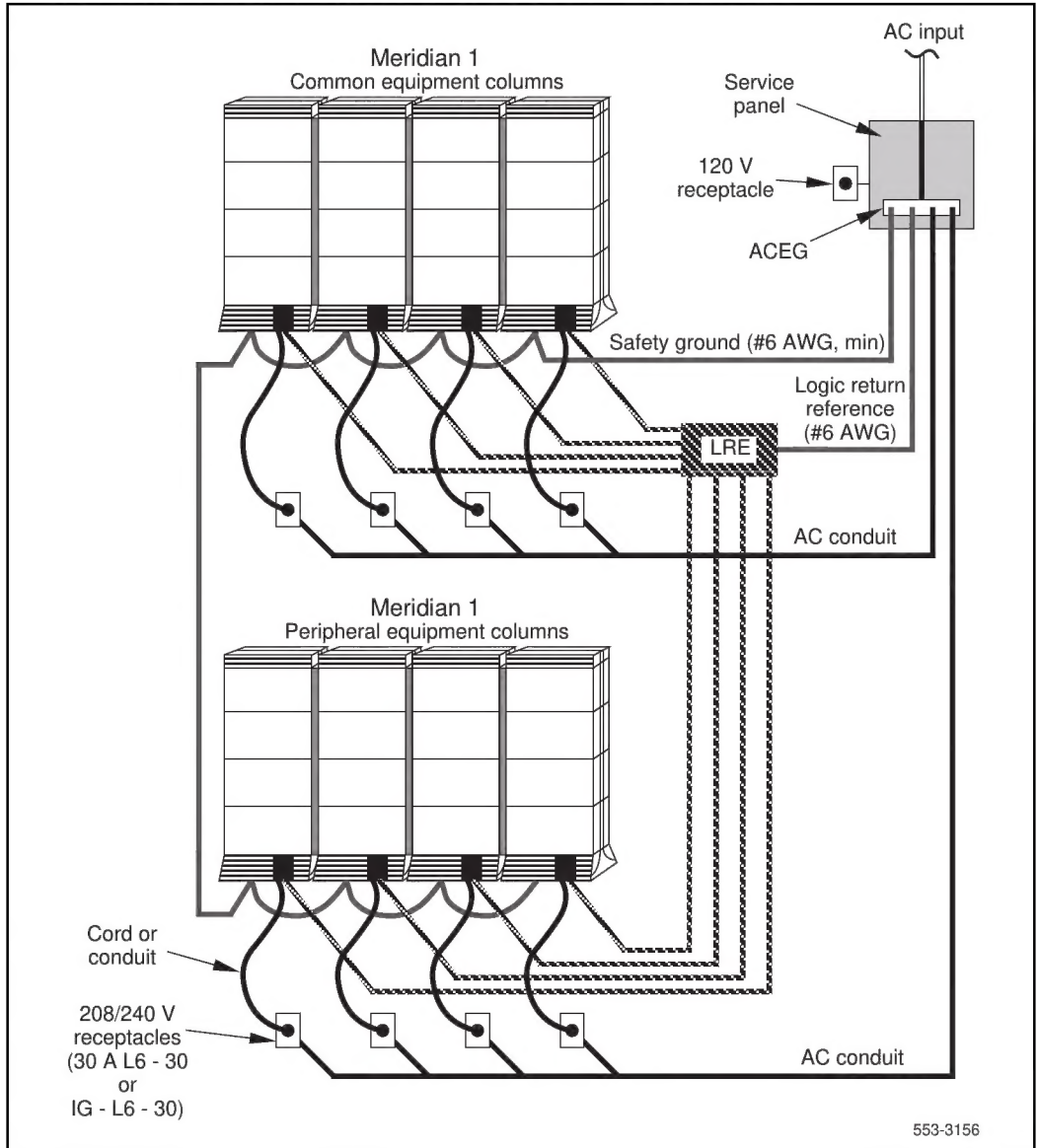


Figure 20
Multiple-column, multiple-row—ground and logic return distribution



Installation procedures

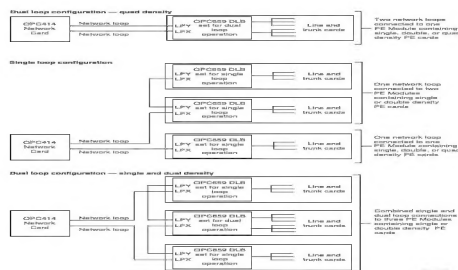
Installing safety ground/protective earth and logic return wiring

WARNING

Failure to follow grounding procedures can result in unsafe or faulty equipment. See *Meridian 1 installation planning* (553-3001-120) for a complete description of approved ground sources and methods.

- 1 Make sure the power cord is disconnected from the power source.
Note: As a safety precaution, disable the circuit of each column at the service panel.
- 2 Remove the air intake grill.
- 3 Using a volt/ohm meter, measure the resistance between the ground pin on the power plug and a ground lug on the rear of the pedestal.

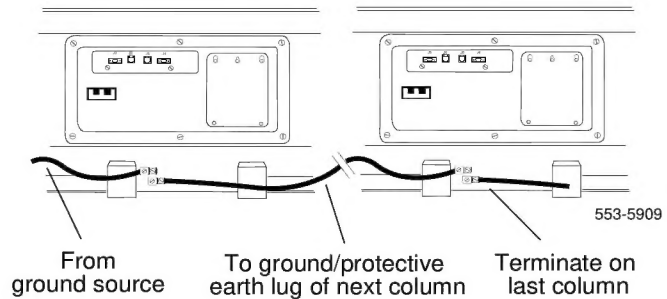
The resistance should be 0 ohms; if it is greater, check the power cord connections.



- 4 Connect the safety ground/protective earth wire (insulated ground wire *must* be used for system grounding):

For a single-column system, connect a #6 AWG wire from the ground source in the service panel to a ground lug on the pedestal.

For a multiple-column system, connect a #6 AWG wire from the ground source in the service panel to a ground lug on the closest column. Daisy-chain #6 AWG ground wires from one pedestal to the next, connecting all of the columns (or run a #6 AWG wire from the ground source to each column individually).



- 5 Place a warning tag (WARNING—TELEPHONE SYSTEM GROUND CONNECTION—DO NOT DISCONNECT) on the connection at the ground source.

- 6 Using a volt/ohm meter, measure the resistance between the ground pin on the power plug and the ground terminal on the power outlet.

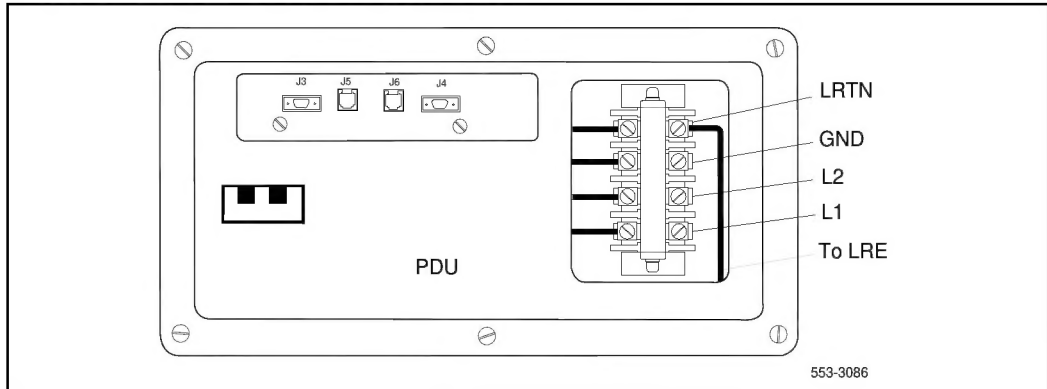
The resistance should be 0 ohms. If the resistance is greater than 0.5 ohms, check the power outlet ground and safety ground/protective earth connections.

- 7 Remove the field wiring access plate on the PDU.
- 8 Connect the logic return wire.

Starting at the LRE, connect a #8 AWG wire and route it to the column and up or down the I/O channel area, as appropriate, then through the conduit hole in the pedestal to LRTN on the field wiring block (see [Figure 21](#)).

- 9 Replace the field wiring access plate on the PDU.

Figure 21
Logic return connection for each column



UPS ground cabling

Use the manufacturer's documents to install and cable a UPS. If the UPS does not contain an integral bypass switch, one should be added externally during initial UPS wiring. [Figure 22](#) is a block diagram of a UPS installation and associated wiring.

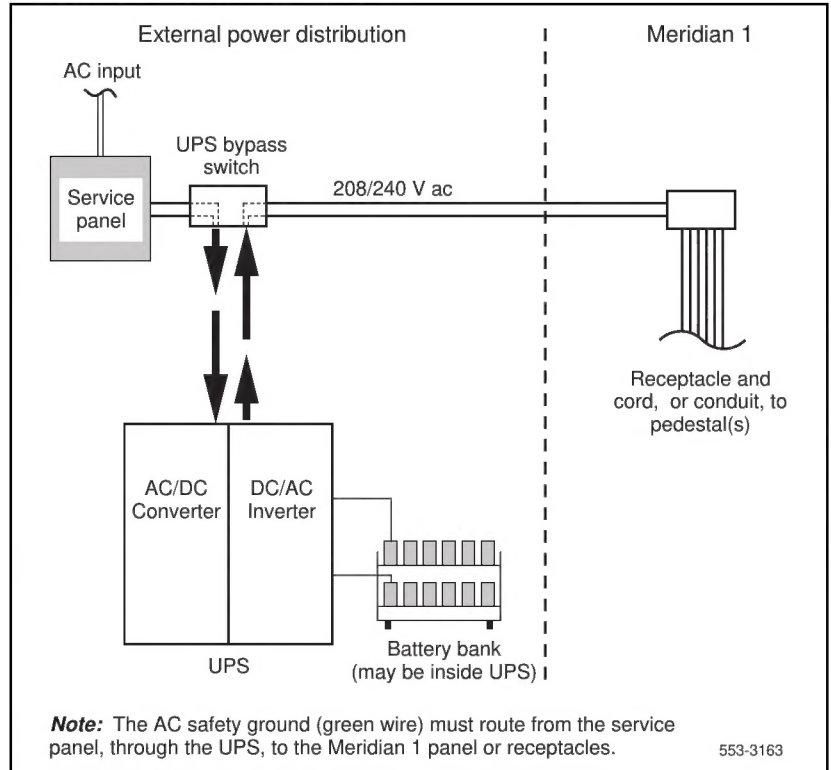
Note: Because UPS installation can be complex, we recommend that installers attend vendor training programs.

CAUTION

Take care when connecting battery leads to the UPS. A battery reversal can result in severe damage to the UPS.

- 1 Make sure the safety ground/protective earth wire is connected on all Meridian 1 columns.
- 2 Daisy-chain ground cables to each UPS (see [Figure 23](#)) using #6 AWG wire.

Figure 22
AC reserve power configuration



- 3 Daisy-chain ground cables to each bypass switch (if equipped) using #6 AWG wire.
- 4 Run a #6 AWG wire between the ground lug on the rear of the pedestal, the bypass switch, and the UPS to a common frame ground point.
- 5 Run a #6 AWG wire between the common ground point and the ground bus in the service panel.

Figure 23
UPS grounding diagram

